The Birds of the Latin Poets. By Ernest Whitney Martin. Leland Stanford Junior University Publications. University Series. Stanford University, California. Published by the University. 1914. Pp. 260.

This, the latest contribution to the literary side of ornithology, covers a virgin field. In "The Birds of the Latin Poets" Professor Martin has attempted to bring together from the Roman poetical writers their passages which mention birds of any particular kind; and an examination of his text and appended bibliography shows how admirably he has succeeded. Very wisely no attempt has been made to include either prose passages or references to birds in general.

After a brief preface these quotations form the major portion of the book, in which the arrangement is conveniently alphabetical by names of birds, from *Acalanthis* to *Vultur*. Under the Latin name or names of each bird is given a Greek equivalent or equivalents, the English names, and the scientific name or names, the last in many cases not more than generic. Comment on the use of two or more Latin names for the same bird is sometimes added, together with various notes and explanations, including many mythological references. There are mentioned also the conspicuous avian parallels of American poetical literature, these birds being not the scientific equivalents, but, as our author very well puts it, "the birds which have aroused similar reactions in the feelings of their poetic observers." A list of American poems thus pertinent to the bird in hand is given when possible; also a list of Latin epithets, some of the latter being especially interesting, as, for instance, in the case of *Aquila*. Then follow the various Latin quotations arranged under different topics, and liberally interspersed with the author's comments and with extracts in English, mostly from American poets. These passages for each bird occupy from half a page, or even less, to as many as 17 pages. Not counting synonyms entered for convenience of reference, 70 different birds are thus treated, among which, as of particular interest, may be mentioned *Anser, Aquila, Cycnus, Hirundo* and *Luscinia*.

Following this treatment of individual birds are four "Notes" of several pages each—virtual appendices—on "The Spring Migration and Spring Song"; "The Fall Migration and the Fall Song"; "The Hibernating of Birds"; and "Ruscinia." Under the first of these headings quotations are given to show the attitude of both American and Latin poets toward the spring movements of birds; and under the second caption similar treatment is accorded the fall migration. The mythical hibernation of birds is considered in like manner in "Note III." The last of these "notes" is devoted to a discussion of the origin and identification of the "ruscinia," and of the application of this name to the nightingale. The author's conclusions regarding this obscure question come probably as near the true solution as is now possible.

A "Bibliography of the Principal Literature Consulted" and an index of all the citations from Latin authors complete the book.

This treatise has been written, and its numberless quotations collected, for the purpose of showing the Roman attitude toward bird life so far as it is depicted by the Latin poets. The result is thus much more than a mere collection of quotations, and really gives an insight such as perhaps we could obtain in no other way. With our present-day knowledge of birds it is somewhat difficult for us to realize how meager and vague, when the Latin poets lived and wrote, was even the scientific information regarding bird life, and how interwoven and bound up with tradition, mythology and augury were even the common facts of every-day observation; a condition which renders difficult, indeed, often impossible, the very identification of the birds that they had in mind and at the tip of the pen. By reason of this we ought the more to appreciate the additional light that comes from researches such as these of Professor Martin's. Of notable interest is the Roman attitude toward the song of birds, as disclosed by the poets. This is, as our author expresses it: "that they nearly always felt a tone of sadness in the songs of their favorite song birds, where we are inclined

to feel joy and ecstacy." This, our author, with much reason, holds, is due to the ancient prevalent belief in metamorphosis, through which the Roman thought of his birds not simply as birds, but also as human beings in changed form. Another observation worthy of mention, to which our author is led by his study of the writings of American poets, is that in the latter is found much more traditional Greek and Latin bird lore than the ordinary reader realizes.

It is unfortunate, though perhaps unavoidable, that of a number of the birds treated, identifications more specific were not made. Moreover, while we do not forget that the purpose of the book is primarily not scientific, but literary, we are of the opinion that its literary flavor would not have suffered from the use of proper modern scientific names instead of the antiquated terms that appear under many of the species. Any well-informed ornithologist could have furnished these. Less excusable is the statement (page 242) that the nightingale is not a thrush, but a member of the "silvidæ." A good index of bird names would have aided much in finding references scattered through the text.

Few of us, however, can fully appreciate the great amount of research involved in the task that the author has set for himself; and we owe him a debt of gratitude for having put before us in such readable form the results of his industry; and for having produced a treatise that will be interesting and profitable alike to classicist, litterateur, and ornithologist. It furthermore impresses us anew with the thought that in all phases of ornithological study there are the same endless possibilities that these lines of the poet suggest:

Quis volucrum species numeret, quis nomina discat?
Mille avium cantus, vocum discrimina mille.

HARRY C. OBERHOLSER

A Montane Rain Forest. A Contribution to the Physiological Plant Geography of Jamaica. By FORREST SHREVE. Carnegie Institution of Washington, Publication No. 199.

This admirable presentation of the results of eleven months' study of the forests of the Jamaican mountains should demonstrate the value to American botany of a laboratory in the primeval forest of the western tropics. It ought also to prove the pioneer of a whole series of exact distributional and experimental studies of American tropical vegetation.

The main ridge of the Blue Mountains, which varies from 5,000 to 7,428 feet in height, lies directly across the path of the northeast trade winds. In consequence of this the climate of the northern, or windward side is fog-drenched and constantly humid, with a rainfall of 160 inches. Two miles south of the ridge, however, the precipitation is but 105 inches, the percentage of sunshine is far higher and hence the climate is decidedly warmer and less humid. The whole region is frostless. The annual range of temperature is about 42° Fahrenheit, and the daily range close to 12°.

The flora of the rain forest is less varied than that of the neighboring tropical lowlands. The composition of the flora is rather less like that of these lowlands than that of a temperate forest. A list is given of the higher plants, which is not intended to be complete, but does embrace the more characteristic species. It includes 93 pteridophytes and 187 seed-plants.

The vegetation of the untouched rain-forest is dominated by a nearly continuous covering of trees, very few of which get to be more than 50 feet high and 2½ feet in diameter before being undermined by the rapid erosion characteristic of the region. On the ridges and higher slopes the trees are reduced to 15 or 20 feet in height. The floor of the forest, especially of the windward slopes and ravines, supports many shrubs and has an abundant carpet of herbaceous mosses, ferns and seed-plants, while numerous epiphytic mosses, ferns, orchids and bromeliads stick to the branches of the trees and lianes often overspread their tops. On the leeward slopes, and on the ridges of both sides trees are more scattered, the herbaceous ground vegetation is sparse, but thickets of shrubs or of climbing ferns and